

(Organic Chemistry)
MASTER OF SCIENCE (CHEMISTRY) (CBCS - 2018 COURSE)
M.Sc. (Chemistry) Sem-III : WINTER :- 2021
SUBJECT: ADVANCED STEREOCHEMISTRY

Day: Tuesday
 Date: 25-01-2022

W-20152-2021

Time : 02:00 PM-05:00 PM
 Max. Marks: 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Both the sections should be written in **SEPARATE** answer book.

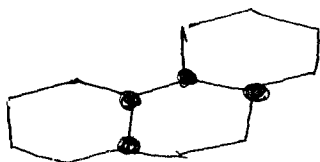
SECTION - I

Q.1 Attempt **any three** of the following: **(15)**

- a) The Ketopinic acid given below, although it is a β - Keto acid, does not readily undergo decarboxylation. Explain.



- b) Draw the stereostructure of following isomer of perhydrophenanthrene. Give nomenclature and calculate its energy.

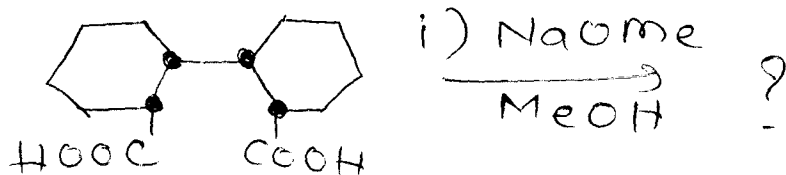


- c) Give experimental evidences to establish relative configuration of C₆ and C₁₃ in morphine.
- d) Write a note on 'Transannular-Reactions' with suitable examples.
- e)

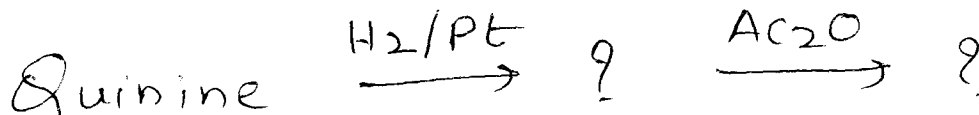


Q.2 Predict the product/s in **any three** of the following and discuss the stereochemical principles involved in them : **(15)**

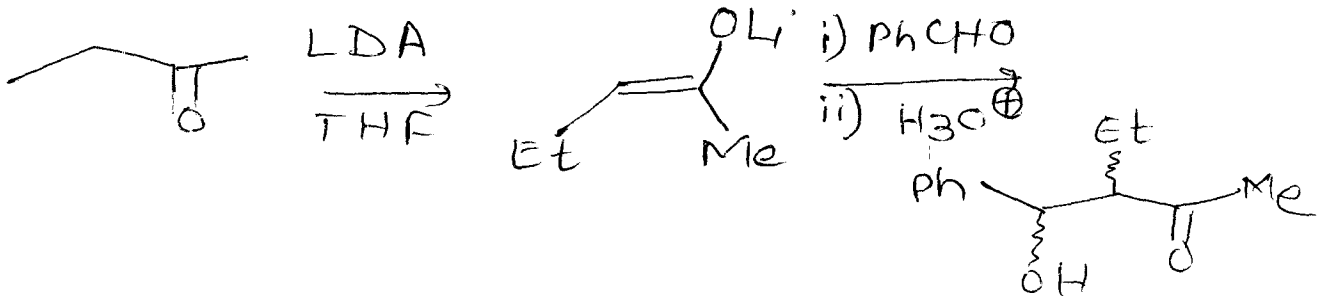
a)



b)

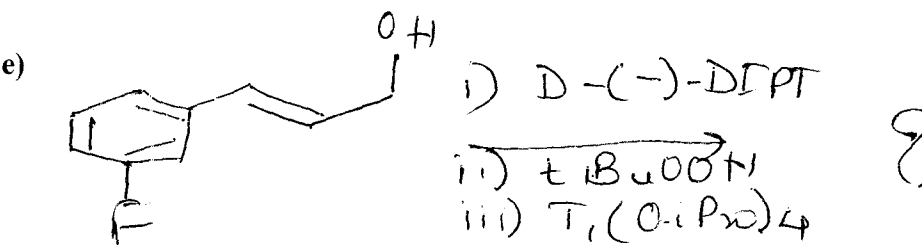
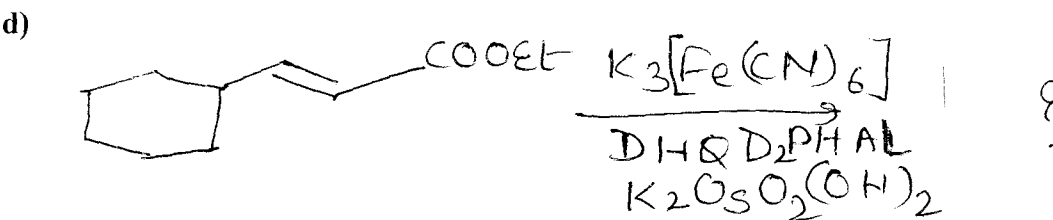
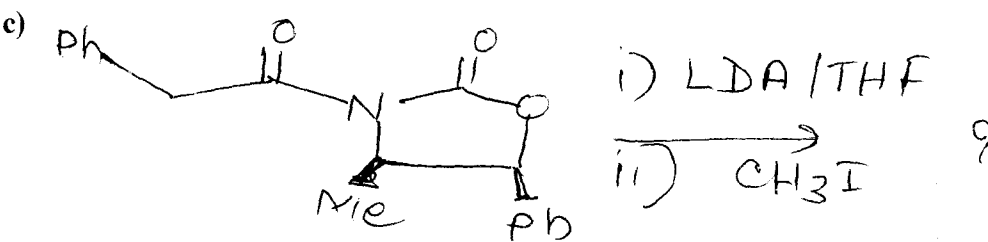
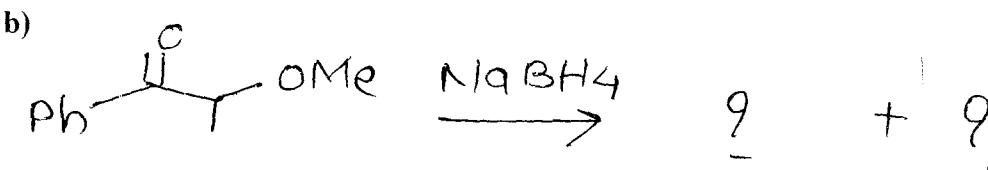
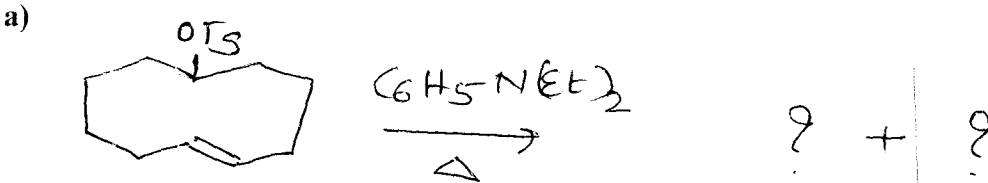


- c) Explain with suitable examples the concept of Transannular reactions.
 d) For the following aldol-type reaction, explain which product (syn or anti) is expected to be major. Why? Draw transition-state to explain your answer.



- e) Draw the structure of trans-syn-trans isomer of perhydropheanthrene. Comment on its optical activity.

Q.4 Predict the product/s in **any three** of the following. Justify your answer (15)



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